

**Saving Our CLASSIC Heath 8-Bit Machines!**

# SEBHC JOURNAL

*The Society of Eight Bit Heath Computerists' Monthly Newsletter*

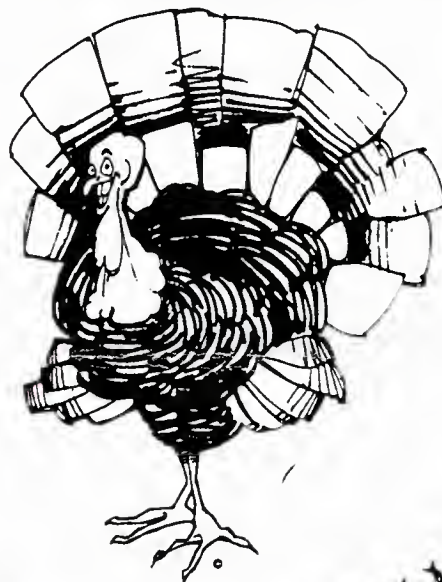
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*Subscription Information & Order Blank on Page 11.*

**Thanksgiving**



# SEBHC JOURNAL

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## Reader's MAILBAG

Dear Len,

I finally got around to sorting and organising all my 8-bit stuff [which] I'm now willing to part with. I'm not abandoning the H89/90 world altogether as I'll keep one system, and I have accumulated many data MegaBytes on 8-inch discs. But I've had to heavily get into the peesee and Mac worlds for my work of creating hundreds of professional cross-word puzzles.

I'd be grateful if you could mention in the next SEBHC JOURNAL issue that I have all this [surplus 8-bit] stuff and that anyone who's interested [in it] can either call, or send me a \$10 SASE for a complete list.

I'm sorry to disappoint you by not renewing my subscription. You're doing a great job, but my wife is on my case [because of] all the periodicals I get, and I don't do enough with my H89 to justify continuing [the subscription].

In any event, I shall be glad to still help you out in any way that I can.

TERRY HALL, 516 East Wakeman Avenue, Wheaton, IL 60187-3670; phone 708-665-4594

[Hey, Terry; we can't all expect to live forever in the past (even though it appears to some folks that I'm trying to do just that by publishing the JOURNAL)! Thanks for enclosing that "dense-pack" listing of all the 8-bit goodies you have up for disposition. But...I did notice that you didn't show prices on any of the stuff you're offering. You've locked me outside, just drooling to lay hands on all those oh-so-yummy goodies! For example, I'd like to take all those Newline Software programmes off your hands; how much for all??? And some of the other stuff too, for example, everything you have in the "Computer Chef" series (I've misplaced some discs from my original distribution set) and my son--the chef--wants me to fix him up with his own copy of "The Chef". RSVP Really Soon Now! -- ed]

Dear Lennie,

Haven't written in a while, but I keep reading about those old diehards who're finally selling off their '89s and joining the great peesee gold rush. I seem to be headed the other way, and in some ways, I've never left.

Somehow I've ended up with thirteen H/7-89s, in various stages of repair and functionality. I use them in [our]



school, and we have kids swapping disc drives. Next is power supplies and controller boards.

I'm networking my old clunker '89s into the school's peesees via [Lindley Systems'] PC89LINK. Now I have forty-meg drives and CD-ROM operations connected to old CP/M ASCII [machines]. [The] kids do their writing on the 89s and format [that output] with Geowrite on the ibm.

Could you run a notice in the JOURNAL that I'm looking for equipment? Don't throw out any of your [own] equipment, and keep an eye open for anything from terminals to boards. Parts, or even crippled computers should be saved from the landfill. We can use crippled systems for their parts or for take-apart learning.

Contributions to our school are tax deductible, and we can help with UPS [shipping] costs. I'll also be making a trip next summer to the midwest, and could stop in again to load up the Edsel with k-gobs of 'obsolete' silicon.

And by the way, I picked up a Z100 for \$50 this summer, so I've got one of those too!! .... And then someone gave us a DEC Rainbow .... And a Televideo 801 .... Yipes!

STEPHEN H KAISER phd, 191 Hamilton St, Cambridge, MA 02139

[Yo, Doc! Thanks for your letter, orders, and cheques. Nice to know you are still Keeping The Faith! We have on hand a Whole Bunch of "surplus" CPU, TLB, I/O, and other H89 boards, even some keyboards and an outer shell which have gradually accumulated since your last visit (what was it, two years back?), plus a pair of grumpy '89s and one '90 in good working order, which we've recently been wondering how to dispose of to some good end. (You remember our cramped shop space?!) You can have the entire as-is schmateratti of logic cards (about a baker's dozen), and the keyboards for a buck-a-piece and the two w/o-drive-'89s for \$5 each. The working H90 has an old internally mounted full-height 40-trk drive, but it's easily replaced with a pair of 2-sided 1/2-heights. That'll bring it up to snuff! Maybe there'll be a pair waiting by the time you get here. What's more interesting is an old Corvus five-megabyte hard drive w/interface card, CP/M operating system, and dox which maybe you could put to good use. A few LED wires're loose, and some fastening hardware's missing, but it worked on my D-G SuperH89A just fine (I had to guess a bit). It's yours for the price of a cup-a-kawfee & piece of French apple pie! Another D-G Electronics' Super-89 CPU board I have which might interest you is now in D-G's shop in Texas (and should be back Real Soon Now). Run with the Corvus hard drive makes the H90 into Something REALLY Super! Imagine: hardware switched 2/4 Mc/Sec system clock plus 256k bank-switched RAM--including a 40-kb background print spooler AND 147kb RAM-disc--PLUS it's Arithmetic Processor-Chip capable! (Is your mouth watering yet?) Price on the DG? We shall have to dicker a bit over that.... -- ed]

## A Reader's MBASIC PROGRAMME

[Editor's remarks: This is the first of several educational MBASIC math programmes which HB9 user Oscar Yohai has sent us. We shall print the remainder as space permits in subsequent issues. If anyone is interested in obtaining a disc of Oscar's original programmes please write, enclosing \$7.00 for hard sector or \$6.00 for 40 track soft sector and ask for "Oscar's Math Programmes". And remember to include your mail address, including ZIP code!]

```

100 REM          ANNUITY.BAS      by    OSCAR YOHAI
110 PRINT CHR$(27)"E":REM  CLEAR SCREEN & SHOW YOUR COLOURS!
120 PRINT CHR$(27);CHR$(120);CHR$(53);
130 S1$ = " * * * * * "
140 S2$ = " * * * * * "
150 E$=CHR$(155)
160 R1$ = E$ + "p"
170 R2$ = E$ + "q"
180 G1$ = E$ + "F"
190 G2$ = E$ + "G"
200 P1$ = "          "+R1$+" "+R2$
210 P2$ = P1$ + G1$ + "|" + G2$
220 FOR I = 1 TO 45
230  L1$= L1$ + "i"
240  L2$ = L2$ + " "
250 NEXT I
255 PRINT TAB(50);
   R1$;"..... The ANNUITY Calculator .....";R2$
260 PRINT "          "+R1$+" "+R2$
270 FOR I = 1 TO 7
280 PRINT P2$;
290 IF I-2*(INT(I/2)) <> 0 THEN 310
300 PRINT S2$+R1$+MID$(L2$,1,45-LEN(S2$))+R2$;GOTO 320
310 PRINT S1$+G1$+MID$(L1$,1,45-LEN(S1$))+G2$
320 NEXT I
330 FOR I=8 TO 13
340 PRINT P2$;
350 IF I-2*(INT(I/2)) <> 0 THEN 370
360 PRINT R1$+L2$+R2$;GOTO 380
370 PRINT G1$+L1$+G2$
380 NEXT I
390 PRINT "          " R1$+" "+R2$
400 PRINT P1$
410 PRINT P1$+G1$+"x"+G2$;TAB(38);R1$ OLD GLORY ";R2$
420 PRINT P1$+G1$+"y"+G2$
430 FOR I=1 TO 4
440 PRINT P1$
450 NEXT I
460 PRINT "          "+G1$+"yyy"+R1$ " "+R2$+"xxxx"+G2$;
470 PRINT R1$;:PRINT TAB(30)
   ;"PRESS <RETURN> TO CONTINUE";:LINE INPUT Z$
480 PRINT R2$;PRINT CHR$(27);"y5";
490 REM          ..... ANNUITY PROGRAM .....
500 E$=CHR$(27) : CLR$=E$+"E" : VON$= E$+"p" : VOF$= E$+"q"
510 PN$= "..... ANNUITY PROGRAM ..... Revised 08/15/90 ...."
520 AU$= "..... Written by Oscar Yohai ....."

```

```

530 H$="PER          OLD BAL      INTEREST      NEW
   BALANCE      CUM INT"
535 HD$="PER START BAL      INTEREST      TOTAL      WITHDR
   NEW BAL      CUM WITH      CUM INT":PRINT
540 PRINT CLR$ : PRINT TAB(10);VON$;PN$;VOF$;PRINT
550 PRINT TAB(10);VON$;AU$;VOF$;PRINT
560 PRINT TAB(10);
   "This program is designed to print out a savings program"
570 PRINT TAB(10);
   "showing the balances for each compounding period. The"
580 PRINT TAB(10);
   "program also lets you choose an annuity option whereby you"
590 PRINT TAB(10);
   "can select an income for any number of years and print out"
600 PRINT TAB(10);
   "the balances after withdrawals and interest postings."
610 PRINT:PRINT:PRINT:PRINT
620 PRINT TAB(10);VON$;
   "<1> SAVINGS PHASE <2> ANNUITY PHASE <3> BOTH";VOF$;:
   INPUT "ENTER CHOICE";A
630 IF A = 1 THEN 660
640 IF A = 3 THEN 660
650 IF A = 2 THEN PRINT CLR$: GOTO 1800
660 PRINT CLR$
670 PRINT TAB(25);VON$;" SAVINGS PROGRAM ";VOF$;PRINT:PRINT
680 GOSUB 940
690 GOSUB 1020
700 PRINT VON$;AN$;VOF$;PRINT
710 PRINT VON$;:
   PRINT USING "YOU STARTED WITH $###,### AND NOW HAVE
   $###,###";P;08:PRINT VOF$
720 PRINT VON$;:
   PRINT USING "PRINCIPAL ON DEPOSIT FOR ## YEARS AT ##.## %
   INTEREST";Y;(R1*N*100):PRINT VOF$;PRINT
730 PRINT VON$;:PRINT USING " INTEREST EARNED WAS $###,### ";
   08-P:PRINT VOF$
740 PRINT:PRINT VON$;
   " WANT THIS INFO SENT TO PRINTER (Y/N) ";VOF$;:INPUT R$
750 IF R$="Y" THEN 760 ELSE 840
760 PRINT:PRINT:PRINT TAB(30);VON$;" TURN ON YOUR PRINTER ";
   VOF$;PRINT:PRINT
770 INPUT "PRESS <RETURN> TO CONTINUE ";Z
780 LPRINT CHR$(27);"B";CHR$(2)
790 LPRINT AN$ : LPRINT
800 LPRINT USING
   "YOU STARTED WITH $###,### & NOW HAVE $###,###";P;08:LPRINT
810 LPRINT:LPRINT USING
   "WITH PRINCIPAL ON DEPOSIT FOR ## YEARS AT ##.## % INTEREST
   RATE";Y;(R1*N*100):LPRINT
820 LPRINT:LPRINT USING " INTEREST EARNED WAS $###,### ";
   08-P:LPRINT:LPRINT
830 REM
840 PRINT:PRINT
850 PRINT VON$;" WANT TO ANNUITIZE THIS PRINCIPAL FOR INCOME
   (Y/N)";VOF$;:INPUT R$

```

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## MBASIC PROGRAMME Continued

```
860 IF R$ = "Y" OR IF R$ = "y" GOTO 870 ELSE GOTO 900
870 N1=0:R1=0:N8=0:X=0:I1=0:I2=0:P=0:TI=0
880 GOSUB 1820
890 REM
900 PRINT:PRINT VON$;" WANT TO RUN PROGRAM AGAIN (Y/N)";
   VOF$;:INPUT R$
910 IF R$="Y" OR IF R$="y" THEN RUN ELSE GOTO 920
920 END
930 REM
940 PRINT VON$" ENTER INITIAL AMOUNT OF DEPOSIT ";VON$;:
   INPUT P:PRINT
950 PRINT VON$" ENTER ANNUAL INTEREST RATE ";VOF$;:
   INPUT R:PRINT
960 PRINT VON$;
   " COMPOUNDING <1>ANNUAL <2>SEMI <4>QUARTER <12>MONTHLY
   <365>DAILY ";VOF$;:INPUT N:PRINT
970 PRINT VON$; " ENTER YOUR NAME AND ACCOUNT NUMBER";VOF$;:
   INPUT AN$:PRINT
980 PRINT VON$;" ENTER NUMBER OF YEARS AMOUNT ON DEPOSIT ";
   VOF$;:INPUT Y:PRINT
990 PRINT CLR$
1000 RETURN
1010 REM
1020 PRINT:PRINT:PRINT
1030 PRINT TAB(10);VON$;" ACCOUNT NAME ..... ";AN$:VOF$
1040 PRINT
1050 PRINT VON$;"INITIAL AMOUNT INVESTED $";P;" FOR ";Y;
   " YEARS";" COMPOUNDED ";N;" TIMES PER YEAR ";VOF$
1060 PRINT
1070 PRINT TAB(15);VON$;" EARNING AN INTEREST RATE OF ";R;
   "% PER YEAR";VOF$;:PRINT
1080 PRINT
1090 REM
1100 N1 = N*Y
1110 R1 = R/N
1120 R1 = R1/100
1130 OB = P
1140 NB = P
1150 X = 1
1160 PRINT:PRINT
1170 PRINT TAB(25);VON$;" * * * SELECT ONE * * *"; VOF$;:PRINT
1180 PRINT TAB(30);
   VON$;"<1> DISPLAY TABLE ON SCREEN ONLY";VOF$;:PRINT
1190 PRINT TAB(30);
   VON$;"<2> SEND OUT TO PRINTER ";VOF$;:PRINT
1200 PRINT TAB(30);VON$;"<3> NONE OF ABOVE ";VOF$;:PRINT
1210 PRINT VON$;" YOUR SELECTION <1><2><3> ";VOF$;:INPUT Z
1215 IF N>12 GOTO 1770
1220 ON Z GOTO 1310,1230,1770
1230 PRINT:PRINT VON$;
   " TURN OFF YOUR PRINTER THEN TURN IT ON";VOF$;:PRINT
1235 REM This applies only to Oscar's printer
1240 PRINT VON$;"PRESS <RETURN> TO CONTINUE";VOF$;:INPUT R$
1250 LPRINT CHR$(27);"B";CHR$(2)
1260 LPRINT USING
```

```
"\ \ INITIAL DEPOSIT OF $###,###"
;AN$;P:LPRINT
1270 LPRINT USING "COMPOUNDED ## TIMES A YEAR AT ##.## % ";N;
   (R1*N*100):LPRINT:LPRINT
1280 REM + + + PRINTING TABLE SECTION OF SAVINGS PHASE + + +
1290 LPRINT "INT":LPRINT H$;:
1300 LPRINT STRING$(75,"-")
1310 CLR$
1320 REM
1330 PRINT VON$;"INT";VOF$
1340 PRINT VON$; H$ ; VOF$;:PRINT
1350 FOR R = 1 TO Y
1360 FOR C = 1 TO N
1370 I1 = OB * R1
1380 NB = OB + I1
1390 TI = TI + I1
1400 I2 = I1 + I2
1410 PRINT USING
   "###,###.## ###,###.## ###,###.##
   ..###,###.##";C;OB,I1,NB,I2:REM REMOVE MARKER PERIODS!
1420 IF Z = 2 THEN 1430 ELSE 1440
1430 LPRINT USING
   "###,###,###,#####,### ##,
   ###";C;OB,I1,NB,I2
1440 SWAP OB,NB
1450 NEXT C
1460 PRINT
1470 IF Z = 2 THEN 1480 ELSE 1510
1480 LPRINT
1490 LPRINT "END YEAR";X;TAB(30);:LPRINT USING "PRINCIPAL
   BALANCE $ ###,###";OB
1500 LPRINT:LPRINT
1510 REM
1520 PRINT VON$;"END YEAR";X;VOF$;TAB(30);VON$;:PRINT USING
   "PRINCIPAL BALANCE $ ###,###";OB;:PRINT VOF$
1530 PRINT : INPUT "PRESS <RETURN> TO CONTINUE";Q
1540 PRINT CLR$:PRINT VON$;"INT";VOF$
1550 PRINT VON$;H$;VOF$;:PRINT
1560 X = X + 1
1570 NEXT R
1580 CLR$
1590 RETURN
1600 CLR$
1610 FOR R = 1 TO Y
1620 FOR C = 1 TO N
1630 I1 = OB * R1
1640 NB = OB + I1
1650 TI = TI + I1
1660 I2 = I1 + I2
1670 SWAP OB,NB
1680 NEXT C
1690 X = X + 1
1700 NEXT R
1710 REM
1720 RETURN
```



## MBASIC LISTING Cont'd

```

1730 REM
1740 REM * * * * * ANNUITY ---- INCOME PHASE * * * * *
1750 REM
1760 REM ..... Input Section .....
1770 R=R/100 : A=P*(1+R/N)^(N*Y)
1780 OB=A : GOTO 1820
1790 REM
1800 PRINT TAB(20);
      VONS;" ANNUITY INCOME PHASE ";VOF$:PRINT:PRINT
1810 PRINT VONS;
      " ENTER AN INITIAL DEPOSIT AMOUNT ";VOF$;:INPUT OB
1820 CLR$
1821 PRINT VONS;AN$;VOF$:PRINT
1822 PRINT VONS;" INITIAL DEPOSIT OF ";:
      PRINT USING "$###,### ";OB;:PRINT VOF$:PRINT
1830 PRINT VONS;" YOUR SAVINGS IS NOW WORTH ";:
      PRINT USING "$ ###,###";OB;:PRINT VOF$:PRINT
1840 PRINT VONS;
      " YOU CAN ANNUITIZE IT TO RECEIVE REGULAR INCOME PAYMENTS "
      ;VOF$:PRINT
1850 PRINT:PRINT:PRINT:PRINT
1860 PRINT VONS;" ENTER AN INTEREST RATE THAT NEW SAVINGS
      WILL EARN ";VOF$;:INPUT R:PRINT
1870 PRINT VONS;
      " NUMBER OF COMPOUNDING PERIODS PER YEAR <1><2><4><12>";
      VOF$;:INPUT N:PRINT
1880 PRINT VONS;
      " ENTER NUMBER OF YEARS YOU WISH TO MAKE WITHDRAWALS ";
      VOF$;:INPUT Y:PRINT
1890 PRINT VONS;
      " ENTER AMOUNT YOU WISH TO WITHDRAW EACH INTEREST PERIOD";
      VOF$;:INPUT W
1900 REM
1910 CLR$
1920 PRINT VONS;
      " YOUR INITIAL AMOUNT OF $";OB;" INVESTED AT AN ANNUAL INT
      EREST RATE";VOF$:PRINT
1930 PRINT VONS;
      " OF ";R;"% AND WITHDRAWALS OF $";W;N;"TIMES A YEAR";VOF$;:
      PRINT
1940 PRINT:PRINT
      VONS;"WILL PRODUCE THE FOLLOWING RESULTS ";VOF$:PRINT
1950 PRINT
1960 PRINT:PRINT:INPUT "PRESS <RETURN> TO CONTINUE ";Q
1970 CLR$
1975 IF N>12 THEN N=12
1980 B8 = OB
1990 N1 = N*Y
2000 R1 = R/N
2010 R1 = R1/100
2020 REM
2030 PRINT TAB(20);VONS;" * * * SELECT ONE * * * ";VOF$:
      PRINT
2040 PRINT TAB(30);VONS" <1> DISPLAY ANNUITY TABLE ON SCREEN "
      ;VOF$:PRINT
2050 PRINT TAB(30);VONS" <2> SEND TO PRINTER ";VOF$:PRINT
2060 PRINT TAB(20);VONS" MAKE YOUR SELECTION ";VOF$;:INPUT Z
2070 CLR$
2080 PRINT: IF Z = 2 THEN 2090 ELSE 2190
2090 PRINT:PRINT VONS;
      " TURN OFF PRINTER THEN TURN IT ON";VOF$:PRINT
2095 REM Line 2090 applies to Oscar's printer only!
2100 PRINT:PRINT VONS;
      " PRESS <RETURN> TO CONTINUE ";VOF$;:INPUT Q :PRINT
2110 LPRINT CHR$(27);"8";CHR$(2)
2120 PRINT VONS;" PRESS <RETURN> TO CONTINUE ";:INPUT Q
2130 LPRINT USING
      "\ ANNUITY OF PRINCIPAL AMOUNT OF $
      ###,### ";AN$;OB:LPRINT:LPRINT
2140 LPRINT USING
      " AT ###.% FOR ## YEARS -- WITHDRAW $$$,### ## TIMES A
      YEAR ";R;Y;W;N:LPRINT:LPRINT:LPRINT
2160 CLR$
2170 LPRINT HD$
2180 LPRINT STRING$(85,"-")
2190 PRINT VONS;"INT";VOF$
2200 PRINT VONS;HD$;VOF$:PRINT
2210 X = 1
2220 FOR R = 1 TO Y
2230 REM
2240 FOR C = 1 TO N
2250 I1 = OB * R1
2260 N8 = OB + I1
2270 N81 = N8 - W
2280 TW = W + TW
2290 TI = I1 + TI
2300 IF Z=2 THEN 2320 ELSE 2340
2310 REM
2320 LPRINT USING
      "### $###,### $##,### $###,### -$##,### $###
      ,### $###,### $###,###";C;OB;I1;N8;W;N81;TW;TI
2330 REM
2340 PRINT USING
      "## $###,### $##,### $###,### -$##,### $###,
      ### $###,### $###,###";C;OB;I1;N8;W;N81;TW;TI
2350 OB = N81
2360 NEXT C
2370 IF Z=2 THEN 2380 ELSE 2390
2380 LPRINT:LPRINT
      "END YEAR";X;TAB(30);:LPRINT USING "PRINCIPAL BALANCE $$$,
      ###";OB:LPRINT
2390 PRINT: PRINT VONS;
      " END YEAR";X;VOF$;TAB(30);:PRINT VONS;:
      PRINT USING "PRINCIPAL BALANCE $ ###,### ";OB;:PRINT VOF$
2400 PRINT:PRINT:INPUT "PRESS <RETURN> TO CONTINUE ";Q
2410 CLR$:PRINT VONS;" INT ";VOF$
2420 PRINT VONS;HD$;VOF$;:PRINT
2430 X = X + 1
2440 NEXT R
2450 REM

```



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## MBASIC end -- FIRE!!

```
2460 CLR$
2470 PRINT VON$;:PRINT USING
    " YOUR BEGINNING BALANCE WAS $$$,### ";BB:PRINT VOF$
2480 PRINT
2490 PRINT VON$;:PRINT USING
    " YOUR ENDING BALANCE IS $$$,### ";OB:PRINT VOF$
2500 PRINT
2510 PRINT VON$;:PRINT USING " YOU WITHDREW FROM THIS ACCOUNT
    $$$,### A YEAR FOR ## YEARS ";W*N;Y:PRINT VOF$
2520 PRINT VON$;:PRINT USING
    " TOTAL AMOUNT WITHDRAWN WAS $$$,###";(W*N)*Y:PRINT VOF$
2530 PRINT VON$;:PRINT USING
    " TOTAL INTEREST EARNED WAS $$$,### ";TI:PRINT VOF$
2540 PRINT:PRINT:PRINT
2550 PRINT:PRINT:PRINT VON$;" WANT A PRINT OUT OF THIS INFOR
    MATION (Y/N) ";VOF$;:INPUT R$
2560 IF R$="Y" OR IF R$="y" THEN 2610 ELSE 2570
2570 PRINT:PRINT VON$;" SELECT <1> RUN ANOTHER PROGRAM OR <2>
    EXIT TO SYSTEM ";VOF$;:INPUT Z
2580 IF Z=1 THEN 2590 ELSE 2600
2590 RUN
2600 SYSTEM
2610 PRINT:PRINT:PRINT TAB(20);
    VON$;"      T U R N   O N   Y O U R   P R I N T E R   ";VOF$
2620 PRINT:PRINT:PRINT VON$;
    " PRESS <RETURN> TO CONTINUE ";VOF$;:INPUT Z
2630 LPRINT:LPRINT
2640 LPRINT USING "YOUR BEGINNING BALANCE WAS $ $$$,###";BB
2650 LPRINT
2660 LPRINT USING "YOUR ENDING BALANCE IS $$$,###";OB
2670 LPRINT
2680 LPRINT USING
    " YOU WITHDREW FROM THIS ACCOUNT $$$,### A YEAR FOR ##
    YEARS ";W*N;Y:LPRINT
2690 LPRINT USING
    " TOTAL AMOUNT WITHDRAWN WAS $$$,###.## ";(W*N)*Y:LPRINT
2700 LPRINT USING
    " TOTAL INTEREST EARNED WAS $$$,###.## ";TI:LPRINT
```

### ENTREPRENEURIAL TRAGEDY

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by

John DeArmond

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John DeArmond

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### F I R E !

About 9:20am, Friday, April 14th, I was sound asleep. Below me in my office, my company was going out of business--only I didn't know it yet. My partner and I had worked on our

new product until about 8:00am that morning...we had a prototype running...only a couple months away from an on-schedule product introduction.

As I slept, a computer monitor decided to commit a fiery act of self-immolation. Flames escaping from the monitor ignited a box of paper, then leapt to some plastic parts bins. The bins melted and streamed burning plastic onto a cardboard box below. The office air-conditioning started upon sensing the heat and the resulting draft pulled (the now-out-of-control fire) into the suspended ceiling--which was also the air plenum.

Having been asleep only about an hour, I was oblivious to the goings-on below and didn't wake until around 9:30am, unable to see or breathe due to the dense smoke. As a former rescue squad member, instinct took over and I rolled out of bed and crawled to the door where there was about a foot or so of breathable air at floor level. The door was cool, so I opened it and found two feet of slightly clearer and cooler air above the smoke. Seeing flames coming from the air return vent in the hall, I crawled to the kitchen and found the phone dead! I hit the front yard in my birthday suit. Trying to determine fully just what was happening, I ran to the side of the house where my office was and saw flames coming from the picture window.

I tried to knock the flames down with my garden hose, then ran to my car to use its' phone, then remembered I'd taken it inside for recharging! I then ran--still naked--to my neighbor's house and persuaded him to call the fire department... That was at 9:30am; six minutes crawled by, then the firemen arrived. Five minutes and a thousand gallons of water later the fire was out.

Thus started the worst day of my life: Fire, one of the most lethal forces known to man and particularly small businesses. As I stood there looking at the steaming remains of what had been my business a couple hours earlier, I realised that for the second time in my life I would have to start over, this time from scratch....

There are basically four fire damage mechanisms: 1 - Direct fire damage--things burn or absorb heat, 2 - Water damage, 3 - Immediate smoke and steam damage, 4 - Delayed smoke damage.

**Direct Fire Damage:** The office environment was essentially closed, the fire was very smoky and burned slowly. Under these conditions, smoke, flames, and hot gasses collect at the ceiling and descend as the fire progresses. At some point a temporary equilibrium establishes as infiltration of fresh air balances smoke leakage and so controls the combustion rate.

Hot gasses bake everything they touch. Temperatures may reach 1200 degrees or better. Paper chars, plastics melt... all materials give off toxic and corrosive gasses which are also flammable. If additional oxygen becomes available say thru a breaking window, flashover can and does occur. In my case, vapors from baking paper and melting plastic ignited; my office was instantaneously engulfed in flame.

## F I R E ! cont'd

**Water and Steam Damage, Immediate and Delayed:** Fire hose water pressure is very high and usually causes major damage to not only portions of the burning structure but to everything inside it--business records, books, documents, small parts, etc.. Anything not directly touched by water collects sooty and acidic water vapor, since cold water striking hot surfaces instantly flashes into steam. The steam combines with smoke, changing from heavy, opaque black to a thick grey acidic vapor which then promptly seeks out cool surfaces in and around the structure on which it condenses. The condensate causes damage by hygroscopically coating objects with a very thin film. Superficially, the object may appear to be quite dry, but whenever humidity rises the film attracts water vapor and becomes electrically conductive. This dangerous condition lingers, often for years.

**Immediate Smoke Damage:** The thick, heavy smoke resulting from an oxygen-starved fire coats everything it touches with a thick, greasy black film, quite as heavy as a fresh coat of paint. This coating is extremely difficult to remove. Also, it will destroy almost any electronic equipment because it is highly conductive. Even after thorough cleaning, electronic equipment when powered up will arc, since electricity flows through the smoke film between previously-isolated paths. The result is more flame and destruction!

**Delayed Smoke Damage:** Smoked-filmed bare metal such as un-coated printed circuitry foils rapidly turns green as acids start dissolving it. This also happens to base-metal and silver coin collections, reducing or completely destroying the numismatic value. The thin copper printed-circuit foils, which, if left uncleaned, often will dissolve due to battery-like action at every soldered joint. The unit may work today, but if it rains, tomorrow it probably won't because the foils are no longer intact. Delayed damage often shows up in parts of the building far from the original fire; effects of smoke and steam are all-pervasive. And if a computer is anywhere in a building which has had even a brief fire, you can rest assured that read/write heads on all floppy drives will have accumulated their share of deposited combustion products and by-products. This also applies to all high-voltage elements in monitor video and deflection circuitry, contact-type keyboards and virtually all unsealed plugs and connectors. And smoke infiltrates into data-disc storage cases, condensing on any discs which are not sealed inside plastic envelopes. If you're very, very lucky you may possibly be able to recreate your most-valuable discs....

### HOW CAN I AVOID ALL THIS GRIEF?!

Most Midnight Engineers gradually ease into their business--sometimes accidentally, and usually in some part of their residence. The last thing thought of as a business grows is insurance. We all have (or should have) home-owners or renter's insurance. Most people don't realise that homeowner's policies range from zero to very little protection for business equipment used at home. Some policies do provide a lit-

tle coverage, but it's usually insultingly low--from two thousand to \$5000. But worse, existence of a business in your house invalidates part or all of your homeowner's insurance!

NEVER rely on a homeowner's policy! Instead, find a good, reliable agency which will write a policy for both homeowner and his home business. The firm I finally settled on was Central Mutual Insurance Company, which sells policies thru independent agents. Also, if you're on CompuServe look up SAFEWARE, Inc.. Their Full Replacement-Value policies are available at quite reasonable premiums. NEVER get an "actual cash value" policy because it pays only the DEPRECIATED VALUE of your possessions! A Full Replacement Policy will either repair, or outright replace any insured item.

Whoever you decide upon, be sure to first photograph everything you want insured. Then have an appraiser come in and evaluate every piece of personal and business property in your house. Now buy separate business and homeowner's policies based upon his itemised, written appraisal. And be sure to update the itemised list periodically, attaching pictures (with price) of new items to the list as you buy them.

BE SURE to get "business interruption" insurance because your bills NEVER stop coming. "BI" insurance premiums are based on your sales, stability of your business, and a number of other factors. I'm still investigating this type insurance and will have more details later. But in all cases AVOID any insurance firm with "State" in its' name. These're the guys who try to sell you "actual cash value" policies!

**Liability Insurance:** This kind of insurance can be added to your homeowner's policy as a "rider" if only you and your wife are in the business. The rider is usually inexpensive, but be SURE that you get it to cover you in your business. If the business has considerable assets, or is risky you may also consider commercial liability (CL), premiums for which run from "dirt-cheap" to "outsight". If you think you need it, discuss CL with a reliable agency.

**Intellectual Property Protection:** The Midnight Engineers' most valuable assets are ideas, designs, software, and work notes. For the most part these are irreplaceable. Therefore you MUST protect them. As I've discovered, many accepted protection schemes and practices just don't work, and many simple things do. Let's examine some things by category.

\* Machine-Readable Data \* This covers software, datafiles, manuals, and so on. In my case, I had well over a hundred commercial software packages, and thousands of public domain programmes. These were stored on more than ten hard discs in computers of various types scattered about my office. Each disc was backed up on either DC-600 tapes, or floppies (Fastback). Most backup media was stored in "fireproof" safes. Nevertheless, I lost a LOT of data. Most of my commercial software was destroyed by smoke and heat. In most cases my media was protected but I lost the documentation. I'm finding software vendors vary widely as to their disaster replacement policies. Many vendors refuse to sell you just a manual even after you've given them legal proof of your fire!

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## F I R E ! cont'd

Perhaps I should include a "Good Guys" and "Bad Guys" list in my next installment....

You can figure on losing all your hard drives even if only smoke touches them. Postmortems showed that smoke corrodes plated media. My drives which didn't show media damage had severe smoke-damaged to controller boards and cables to the point that no amount of cleaning would bring them back. We had a half-dozen Segate ST-296 drives from which we were able to salvage some data by temporarily installing a controller board from a new drive....

Backup media was where things really got kinky. Most data in our fireproof safe was unreadable. A temperature tattle-tale on the safe indicated the temperature never got over 100 degrees, but all the tapes and many diskettes were damaged by --you guessed it--smoke and steam. Because the safe door had a fairly good water seal, smoke which had gotten inside was held there by the door seal. When I opened the safe the day after the fire, very strong fumes escaped. Some exposed media did survive, and almost all tapes which were in regular metal-tape cases were unharmed. But this might never happen again, so don't think it can work for you!

I found that diskettes in regular flip-top plastic storage containers on my workbench survived and were readable, even though I had to break open the containers! The top drawer of a metal file cabinet was left partially open and most of its' contents burned, but the drawer below was closed and didn't even suffer water damage. And all papers and books kept in things as simple as non-fireproof file cabinets and book cases with doors survived with nothing more than some odor. Most damage to my papers and books was caused by either superheated gasses or radiant heat. Any kind of barrier will mitigate both. Some books behind a cardboard poster were not affected, but simple metal file cabinets offered 100% protection, and I found that everything in my CLOSED desk drawers survived the fire.

### PROTECTIVE MEASURES WHICH YOU SHOULD TAKE

**MAGNETIC MEDIA:** First off, get a fireproof safe. If you can afford it, buy a safe rated for data storage. There's a big difference between paper and data safes. Paper safes are UL rated for one hour before the interior reaches 350 degrees and the fireproofing is allowed to emit water vapor. Data safes are rated for one hour before reaching 100 deg inside, and the fireproofing does NOT release moisture. This type is VERY expensive--three to 4 times more than paper safes, but you might pick up a good used one cheap from the want ads!

Second, put each piece of media in its' own zip-lock bag to seal out smoke and steam before placing it in the safe. This works pretty well in a paper safe, but why chance it unless you regularly win at LOTTO!

Note that the UL safe ratings have been developed for any type of safe. They're subjected to 1700deg heat in a large oven for one hour. Safe temperature inside is monitored and must not exceed the specified amount (350deg for paper safes,

100deg for data) during the test period to earn the UL stamp.

If a safe is enclosed in any type barrier which blocks direct radiation, its' contents have much greater protection. In a poured or cinder-block basement, build a cinder-block or dry walled closet for your safe. Dry wall filled with glass wool is good, but blocks are ideal, especially if the blocks are linked with "re-bars" and mortared together. You might even go thru the basement wall and construct a block-walled "cave" with a steel door for fire (and theft) protection and to ward off falling debris. In either situation, make the enclosure big enough that your file cabinets can fit inside along with the safe; thus you're in pretty good shape. If it isn't possible to keep your safe in the basement, at least put it on a reinforced floor somewhere out of the way and stack bricks around it to cut down on radiant heat absorption. Floor reinforcement delays a safe from dropping through a burning floor for quite some time. Also, note that wood keeps its' strength longer than steel, so use wood posts and beams to strengthen the floor beneath the safe.

**IMPORTANT!** Set up an off-site storage program for backups so if your house/office/shop burns your backups are still ok. "Fort Knox", "U-Store-It" or similar safety-deposit-box rental and storage locker shops are everywhere. Check the yellow pages for nearby sites and their monthly or yearly rents and security provisions. Choose one having a good fire-alarm and sprinkler system plus good insurance, then rent a space big enough to hold all your irreplaceable stuff AND weekly backups. Make archival backups of your entire hard-disc files and programs. Keep them separate from your weekly backups. You should schedule a weekly visit--preferably the same day every week--and put backups of your latest work in the safety deposit box. I use a sort of leap-frog backup system, replacing last week's backups with this week's, then erase, reformat, verify, and re-use that older medium for my next batch. Sounds tedious, but it definitely works! If you can devise a better scheme, let me know....

**MOST IMPORTANT!** Develop the clean-desk habit. Sure, it's a drag, but the few minutes you take to clean up and put away loose paper and other flammable items in closed storage space will prevent your having to restart and redo all your work. In my case, all my current and most-critical work was burned. If it's too much trouble to put things away, just pick up the desk blotter and store it in a drawer or cabinet overnight. I'm still discovering additional stuff which was on my desk is now lost....

**PROFESSIONALLY MONITORED ALARM SYSTEMS:** These take a huge load of responsibility off your back because you're not there non-stop, twenty four hours a day, 365.25 days a year! Check the yellow pages for reliable firms such as American District Telegraph or Honeywell. These firms have both phone-line or radio alarm-links and do a great job of alerting both police and fire department. Automatic alarms dial emergency numbers then play messages describing the reason(s) for any emergency calls. Alarm installations usually reduce insurance premiums upwards of fifty percent.... [Continued next month]

## Miscellaneous REMarks

### NOTES About the "FIRE!" Article

MIDNIGHT ENGINEERING (The Journal of Personal Product Development), is published six times a year by William B Gates (no, NOT THAT one!), 111 E Drake Road, Suite 7041, Fort Collins, CO 80525; phone 303-225-1410. Subscriptions \$24/yr, single copies \$4.95 US, \$5.95 Canada/Foreign.

The original FIRE! article appeared in Midnight Engineering's July-August 1991 issue. We thank author John DeArmond for his generous permission to copy, quote, and condense the article for the benefit of our subscribers who may gain some very useful knowledge from it. John can be reached at Rapid Deployment systems, Post Office Box 670386, Marietta, GA 30066; phone 404-578-9547. Modem by usenet:jgd@rsiatl.uucp.

Please let John know how you liked his article--and where you found it!

### HEY, 8-BIT HACKERS--THIS AIN'T NO XMAS HUMBUG!

We still have a few H/Z educational courses left up on our JOURNAL's shelves which certainly would make GREAT Holiday gifts for someone who hasn't yet learned how to efficiently program their H/Z computer. There's only ONE EACH "Programming in COBOL" and "Programming in MBASIC" package left at only \$19.95 each, shipping included. But there still are SEVEN sets of "Programming in (HEATH) FORTRAN" waiting for some lucky body to "steal" at \$19.95 a copy! Please order by course name.

If you have a particularly-good re-sale prospect for this superb material, buy all nine packages of Heathkit Continuing Education Courses for only \$143.64 (discounted 10% from the single-item price), we pay shipping! (That's \$895.50 original-price-worth of top-notch educational material for about six percent of the original Heath catalogue price!) Order the "Nine Pack", please.

NOTE: THIS MATERIAL IS THE LAST OF ITS' KIND AND IS NO LONG-

BE AVAILABLE FROM HEATH COMPANY or HEC-type retail outlets. ONCE IT'S GONE, THAT'S ALL SHE WROTE, BABY!

\*\* Also note that each completed course final exam (passing grade of 70% or better) earns you a certificate good for six Continuing Education Credits. These credits then may be applied to a Junior College or University computer course--details are included with each course.

### A SPECIAL INNER-CITY HOLIDAY RAP "SONG"

(Rap to the rythm of "Jingle Bells")

Oh what fun/  
It is to sing/  
A slaying song tonight./  
Chorus: MURDER! MURDER! MURDER!/  
MURDER, EVERY DAY...

Please note that our "8-Bit Hardware Hacker Illustrations" feature didn't make it to this issue--time just ran out! But we shall put something of value in the December-91 edition, rest assured. And thanks to our readers who've commented favorably about previous "Hacker" items. It's nice to know that you're helping someone keep their equipment going.

We have nearly run out of humor items (computer-related stories, articles, cartoons) and most assuredly shall be delighted to receive donations of such from our many readers. Although we can't pay (due to severe retrograde cash flow) for such submissions and donations, we'll compensate at the rate of a free issue added to your subscription for each acceptable cartoon. Compensation for stories and articles remains as before, that is, one free extra year extension to your basic subscription for each item submitted and accepted.

Put a fresh ribbon in your printer and get cracking!

---<<[[-8-]]>>---



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## EIGHT-BIT & "OTHER" VENDOR LIST

==> EIGHT-BIT SOURCES, SERVICES, and VENDORS DIRECTORY <==

Listing last updated on 30 Nov 1991

CDR SYSTEMS, Inc., 7171 Ronson Road, San Diego, CA 92111; ph: 619-560-1272, 9a-5p Pacific Time Zone--ask for Herman.

Chalfant, Rick, 100 Bayberry Drive, Springboro, OH 45066; ph 513-748-1344 Stocks H/Z89s, parts, software. Check him out; you might be pleasantly surprised!

D-G ELECTRONIC DEVELOPMENTS Co., 700 S Armstrong, Denison TX 75020; \* phone 903-465-7805 (Central Time Zone) \* 8-bit "Heartbeat" computer, 8-bit "Super89" CPU upgrade/replacement board. Bruce Denton, president; Service & advice available, also some H8 and H/Z89 hardware at clearance prices; contact Bruce for details. A \*Certified\* GOOD GUY!

DISK MOVERS, 8534 McCormick Blvd, Skokie, IL 60076; phone 708-679-3727 (Central Time Zone)--ask for Miriam. HARD-SECTOR and soft-sector discs for H/Z8s, '89s in bulk quantities at very low prices! "VERY NICE and HELPFUL PEOPLE." (Do give them a call and mention us!)

GOLDSMITH SURPLUS, 2107 N Adams/PO Box 18676, Indianapolis, IN 46218; 317-545-4747, ask for Phil or Eric. Dealers in "Almost Any Surplus Material You Have (or Need)!" (Please mention that you found them listed here!)

HOYLE & HOYLE SOFTWARE, 111 Sparrow Drive, Isle of Palms, SC 29451. (Answer mailed enquiries only.) Their QUERY-III database runs on H8s thru Z120s. "REALLY GOOD GUYS"!

LINDLEY SYSTEMS, 8139 E Mawson, Mesa, AZ 85207 -- phone: 602-380-9175. All kinds of neat-OH 8-bit software such as PC89LINK--lets you transfer 8-bit stuff to H/Z100s and peesees over a null-modem cable. Ask either Bob or Bill for a catalogue, they're Really Fine Fellows!

MAGNOLIA MICROSYSTEMS, 2818 Thorndyke Avenue West, Seattle, WA 98199; phone 206-285-7266 (Pacific Time Zone). Ask for "Mark". Special memory upgrades and op-systems for H/Z89s & 90s. Trustworthy people.

MICRO COMPUTER REPAIR SERVICE, 2308 Industrial Highway, Ste C Ann Arbor, MI 48104; phone 313-663-3646. D-DRIVE REPAIRS & SALES. Ask for Mike Morris, he's "A SUPER GUY" (Tell him Lenny sent you.)

MICRONICS TECHNOLOGY, Suite 159, 54 Dalrada Road, Montgomery, AL 36109; phone 205-244-1597 voice, 205-244-0192 bbs CTZ Darrell C Pelan, pres. Soft & Hardware, '89 harddiscs Catalogue & 8-bit help available. A REALLY GOOD GUY!

New Orleans Data General Services, 7230 Chadbourne Drive, New Orleans, LA 70126; phone 504-241-9388--"Dave".

Colour and sound boards for H8, H89. Out of business, but willing to provide tech advice on their products. Dave's ANOTHER GOOD GUY!

QUIKDATA COMPUTER SERVICES, Inc., 2618 Penn Circle, Sheboygan WI 53081; phone 414-452-4172--Henry Fale (Fah-lay) Prop. Mfr, sales, service, 8-bit machine support & parts; publishes H-SCOOP Heath/Zenith user's newsletter, 24-hour H/Z user BBS. Ever busy but "A REAL GOOD GUY!"

SIGMASOFT & SYSTEMS, 2433 Winterstone Drive, Dallas TX 75023-7818; 214-596-0116 (Central Time Zone)--Clay Montgomery--hardware/peripherals mfr, software publisher, hardware & tech support, RAM drives, Hi-Res grafix addons for H/Z89s. Catalog & help; A \*FANTASTIC\* GOOD GUY!

SKYCASTLE COMPUTER PRODUCTS, Box 1412, San Carlos, CA 94070; 415-254-3931 after 6pm Pacific Coast time--ask for Mike. Calligraphy-II and other FANTASTIC dot-matrix graphic printer software products. A REALLY, SUPER-GOOD GUY!

TMSI/LEE HART, 323 West 19th Street, Holland, MI 49423 616-396-5085 (evenings, weekends--usually) Their motto: "Inovative Products for the H/Z89" Misc. 8-bit hardware items, hardware/software support for '89/90 users. "A NICE GUY & TOP-NOTCH ENGINEER!"

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OTHER VENDOR NEWS... OTHER VENDOR NEWS... OTHER VENDOR NEWS...

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\* Some of our subscribers own an H/Z100-series computer and have contacted us for help in getting repairs, doc, and parts. Dayton, Ohio's HUG "HUG 8UG" newsletter lists a vendor & repair depot--Parts Is Parts, 137 Barkley Ave., Clifton, NJ 07011-3144; phone 201-340-7333. We called, got an answering machine...but no call-back yet....

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\* Please note above that D-G Electronic's area code has been changed. We overlooked that little item last month and apologise both to D-G and our readers!

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\* We sincerely apologise for being so late with this edition! Life ain't easy at chez Geisler these days, what with so much to do and so very few willing hands. Looks as if this issue will be going out with the--not too late, we hope--December number. But we do wish you did have a nice Thanksgiving, and will have a joyful Hanukka!

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TURKEY..CRANBERRY SAUCE..DRESSING..GRAVY..MINCE PIE..SWEET PO

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# SEBHC JOURNAL

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Note: We appreciate receiving, reading, & printing subscriber's letters concerned with H/Z 8-bit problems & cures. And we'd like you to send in more articles for us to publish too!

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Rev 8910630

## The SEBHC JOURNAL's Back Page



# Society and Journal Policies



\* The SEBHC JOURNAL is published once a month and strives to be mailed by the 20th of a month--sometimes we make it! Advt deadline, 10th of each month, holidays & A.O.G. permitting.

\* Subscriptions: \$24.00/year in Canada, Mexico, USA and its' possessions. All subscriptions are mailed FIRST CLASS. Subscriptions start the month following order receipt. PLEASE MAKE CHEQUES or MONEY ORDERS PAYABLE TO L E GEISLER, NOT "the JOURNAL" or "SEBHC". Current back-issue copies are available at \$2.50 each. See order blank for bound volume discounts.

\* Subscribers are automatically Society of Eight-Bit Heath Computerists members. Member's subscription number and expiration are clearly printed on mailing labels. The three member classes are: REGULAR (voting H/Z 8-bit user) ADVERTISING (one vote/vendor) and ASSOCIATE (non-8-bit computerist, library, etc.). REGULAR members can hold any elective Society office. ASSOCIATE members cannot hold office or vote. The Society's official yearly meeting place and time is announced every July in the JOURNAL. Advance registration of US\$25 for each attendee no later than 30 July, please.

\* All advertising is printed Free Of Charge. Vendors: Please do submit your B&W "camera-ready" ad copy, 7" x 9" (1 page to an issue) no later than the 10th of month in which it's scheduled to appear. All Society members can run one new free 250-word (maximum) Unclassified Want Ad every month.

\* All subscribers/members are urged to submit their H/Z-oriented computer articles on disc in standard ASCII format rather than as hard copy. If a word needs to be emphasised or italicised please insert these symbols PRECEDING the word: [EMPH] for emphasise, [ITAL] for italics. We'll return your disc after copying it and will gladly copy any SEBHC JOURNAL software disc onto it. Note: We can't pay authors but we do extend their subscription another year for a published article.

\* The SEBHC JOURNAL is composed, edited and published by L E Geisler at 895 Starwick Drive, Ann Arbor, MI 48105. Phone 313-662-0750, 9am - 6pm Eastern Time Zone, Mon thru Fri only. Other times (EMERGENCIES ONLY): 313-769-6052 (residence).

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